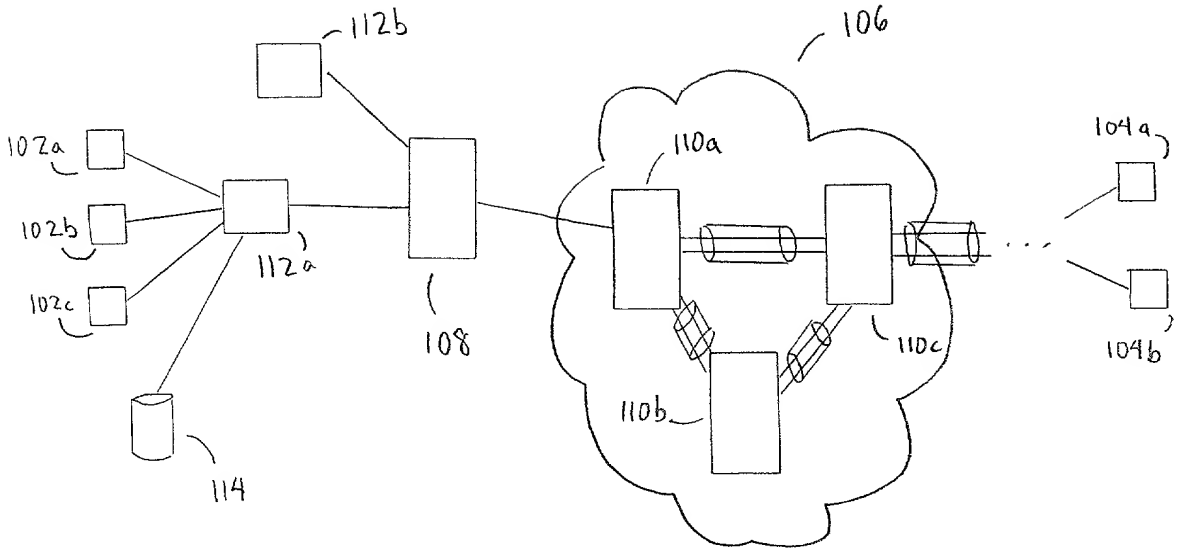
Fig. 1



100

Fig. 2a

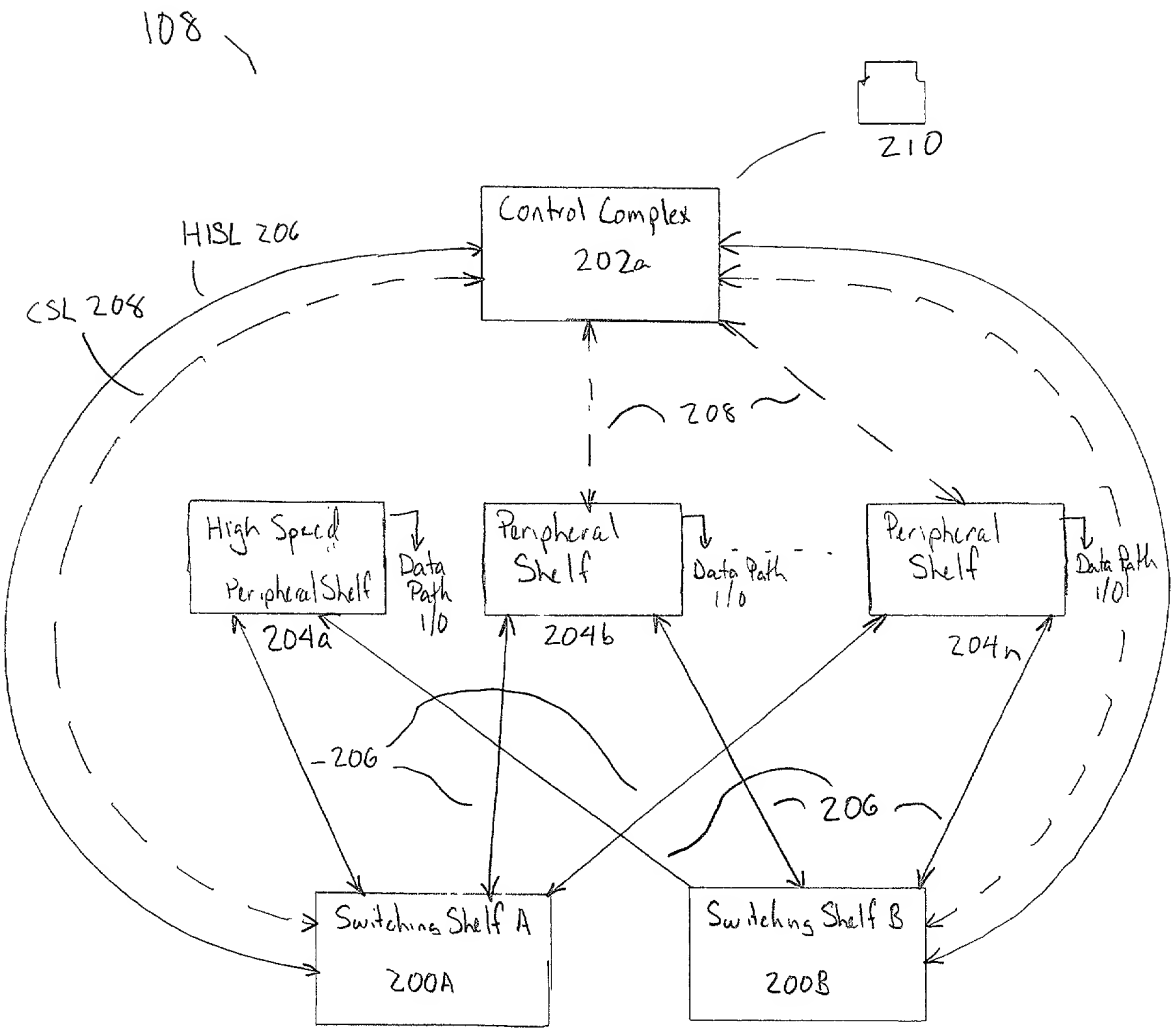

108
210
Control Complex
202a
HISL 206
CSL 204
208
High Speed
Peripheral Shelf
204a
Data Path I/O
Peripheral
Shelf
204b
Data Path I/O
Peripheral
Shelf
204n
Data Path I/O
206
206
Switching Shelf A
200A
Switching Shelf B
200B

Fig 2B

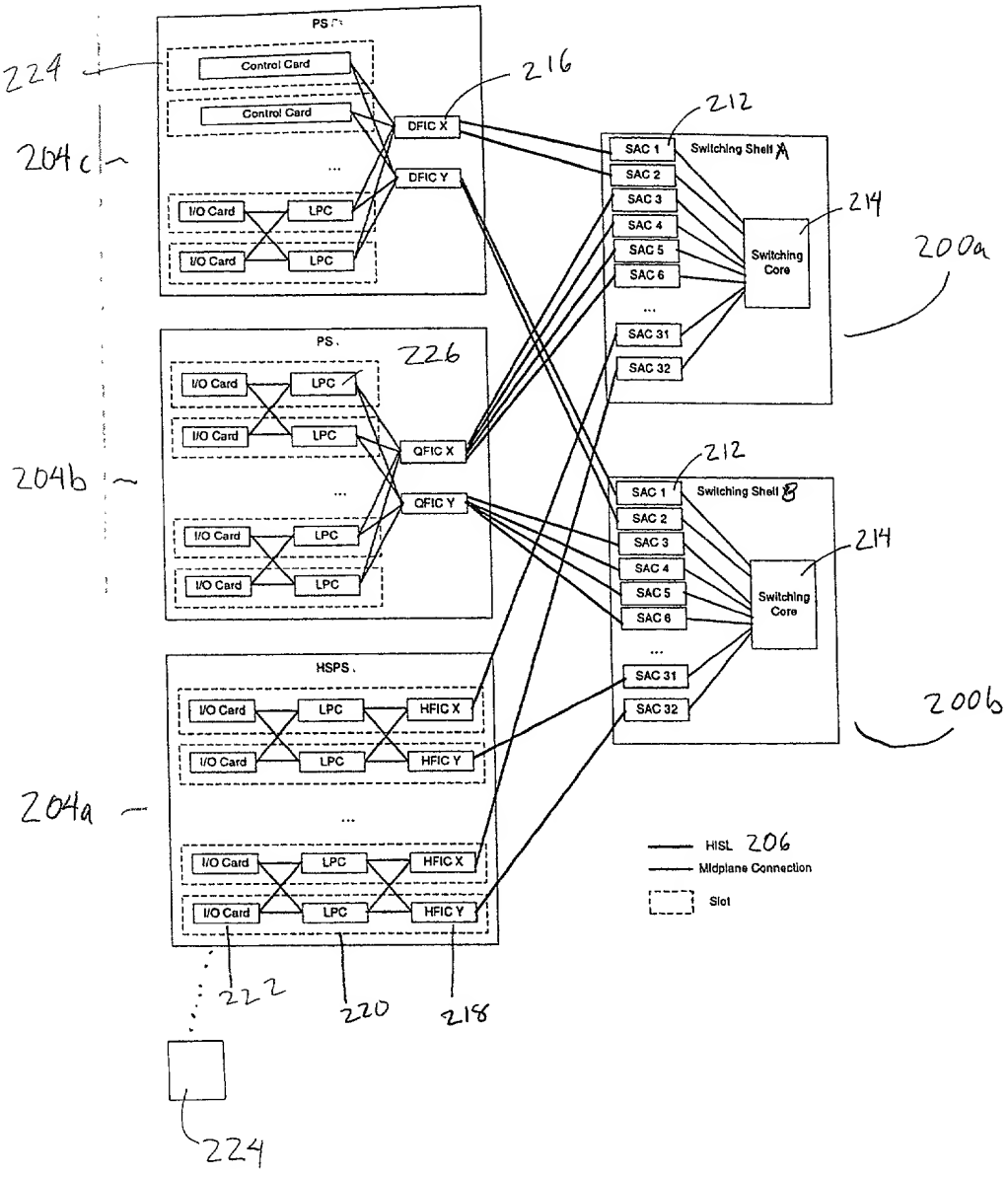

224
204c
216
212
PS
Control Card
Control Card
DFIC X
DFIC Y
I/O Card
LPC
I/O Card
LPC
SAC 1
Switching Shelf A
SAC 2
SAC 3
SAC 4
SAC 5
SAC 6
214
Switching Core
200a
SAC 31
SAC 32
226
PS
204b
I/O Card
LPC
I/O Card
LPC
QFIC X
QFIC Y
I/O Card
LPC
I/O Card
LPC
212
SAC 1
Switching Shell B
SAC 2
SAC 3
SAC 4
SAC 5
SAC 6
214
Switching Core
SAC 31
SAC 32
200b
HSPS
204a
I/O Card
LPC
HFIC X
I/O Card
LPC
HFIC Y
I/O Card
LPC
HFIC X
I/O Card
LPC
HFIC Y
HISL 206
Midplane Connection
Slot
222
220
218
224

Fig. 2C

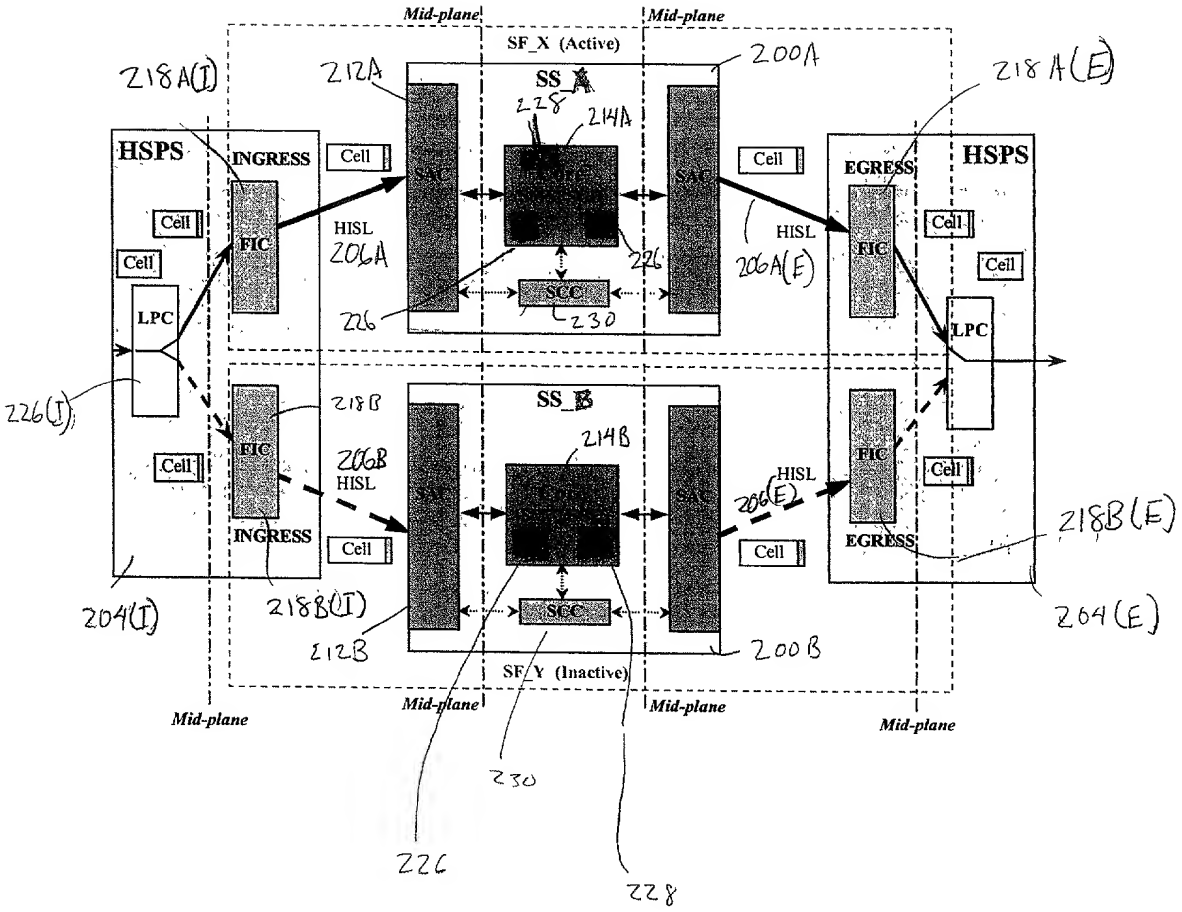

Mid-plane
Mid-plane
SF_X (Active)
218A(I)
212A
SS_A
200A
218A(E)
228
214A
HSPS
INGRESS
Cell
SAC
SAC
Cell
EGRESS
HSPS
Cell
Cell
FIC
HISL
206A
HISL
206A(E)
FIC
Cell
Cell
226
LPC
SCC
LPC
226
230
226(I)
218B
SS_B
214B
206B
HISL
FIC
HISL
206(E)
FIC
Cell
INGRESS
Cell
Cell
EGRESS
218B(E)
204(I)
218B(I)
212B
200B
204(E)
SF_Y (Inactive)
Mid-plane
Mid-plane
Mid-plane
Mid-plane
230
226
228

Fig 3

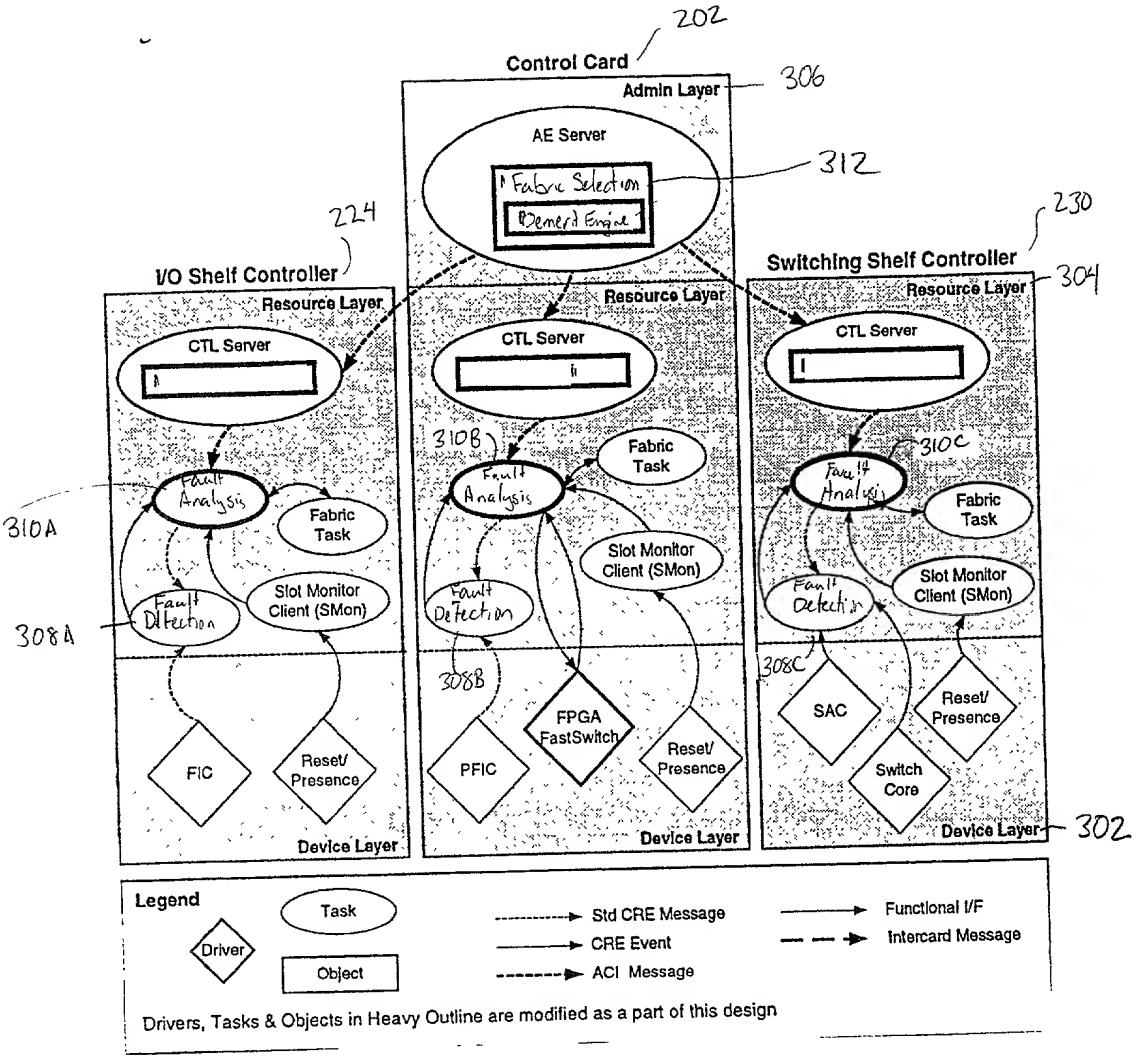

202
Control Card
Admin Layer
306
AE Server
Fabric Selection
Demand Engine
312
224
230
I/O Shelf Controller
Switching Shelf Controller
304
Resource Layer
CTL Server
310A
310B
310C
Fault Analysis
Fabric Task
Slot Monitor Client (SMon)
Fault Detection
308A
308B
308C
FIC
Reset/ Presence
PFIC
FPGA FastSwitch
SAC
Switch Core
Device Layer
302
Legend
Task
Driver
Object
Std CRE Message
CRE Event
ACI Message
Functional I/F
Intercard Message
Drivers, Tasks & Objects in Heavy Outline are modified as a part of this design

Fig 4

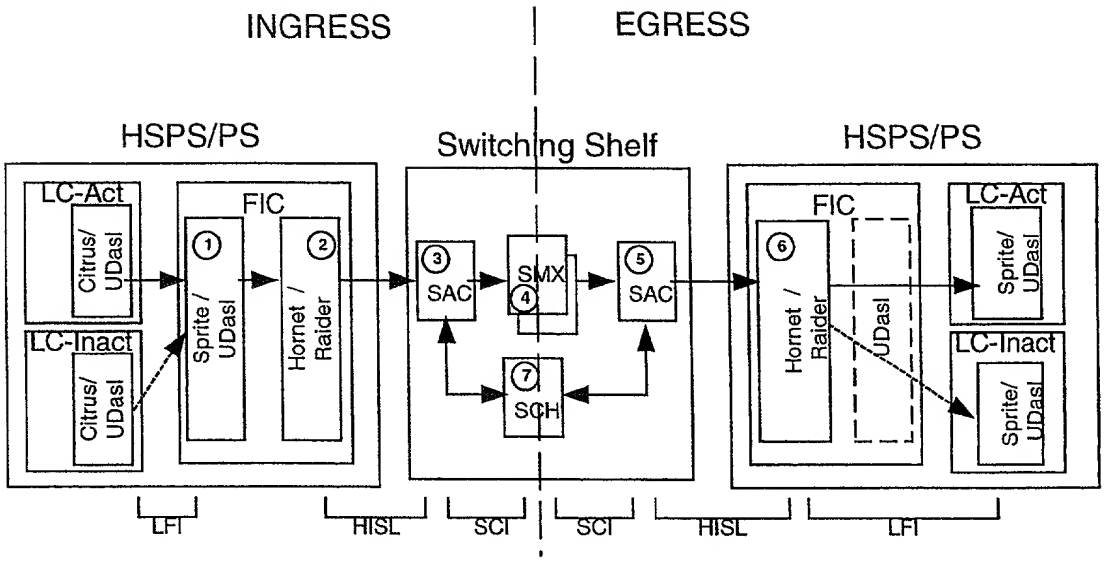

INGRESS
EGRESS
HSPS/PS
Switching Shelf
HSPS/PS
LC-Act
Citrus/ UDasl
LC-Inact
Citrus/ UDasl
FIC
1
Sprite / UDasl
2
Hornet / Raider
3
SAC
SMX
4
5
SAC
7
SCH
6
Hornet / Raider
UDasl
FIC
LC-Act
Sprite/ UDasl
LC-Inact
Sprite/ UDasl
LFI
HISL
SCI
SCI
HISL
LFI

Fig 5

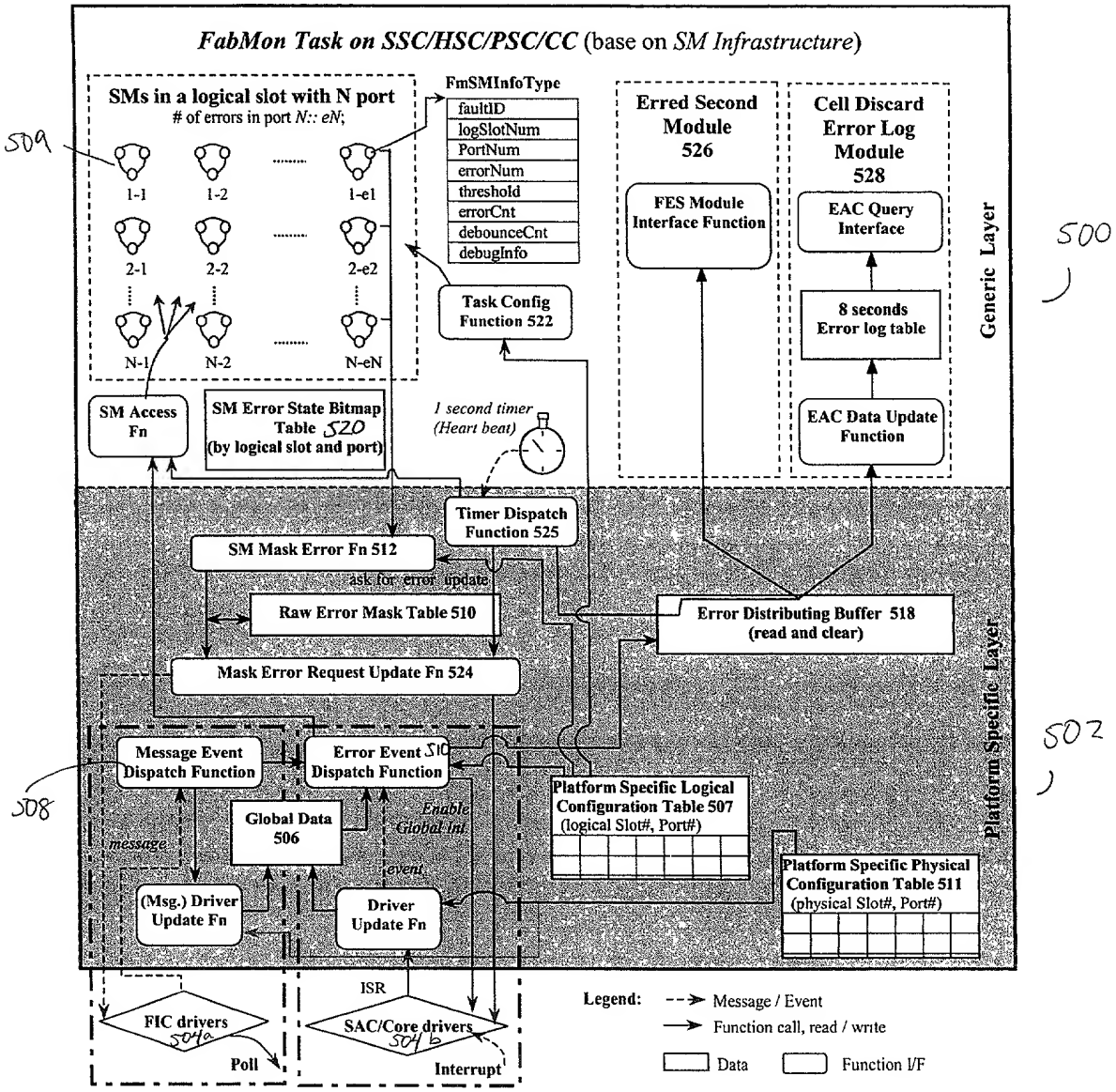

FabMon Task on SSC/HSC/PSC/CC (base on SM Infrastructure)
SMs in a logical slot with N port
# of errors in port N:: eN;
509
1-1
1-2
1-e1
2-1
2-2
2-e2
N-1
N-2
N-eN
FmSMInfoType
faultID
logSlotNum
PortNum
errorNum
threshold
errorCnt
debounceCnt
debugInfo
Task Config Function 522
Erred Second Module 526
FES Module Interface Function
Cell Discard Error Log Module 528
EAC Query Interface
8 seconds Error log table
EAC Data Update Function
Generic Layer
500
SM Access Fn
SM Error State Bitmap Table 520 (by logical slot and port)
1 second timer (Heart beat)
Timer Dispatch Function 525
SM Mask Error Fn 512
ask for error update
Raw Error Mask Table 510
Error Distributing Buffer 518 (read and clear)
Mask Error Request Update Fn 524
Message Event Dispatch Function
Error Event 510 Dispatch Function
508
Global Data 506
Enable Global Int.
message
event
(Msg.) Driver Update Fn
Driver Update Fn
Platform Specific Logical Configuration Table 507 (logical Slot#, Port#)
Platform Specific Physical Configuration Table 511 (physical Slot#, Port#)
Platform Specific Layer
502
ISR
FIC drivers 504a
SAC/Core drivers 504b
Poll
Interrupt
Legend:
Message / Event
Function call, read / write
Data
Function I/F

Fig 6A

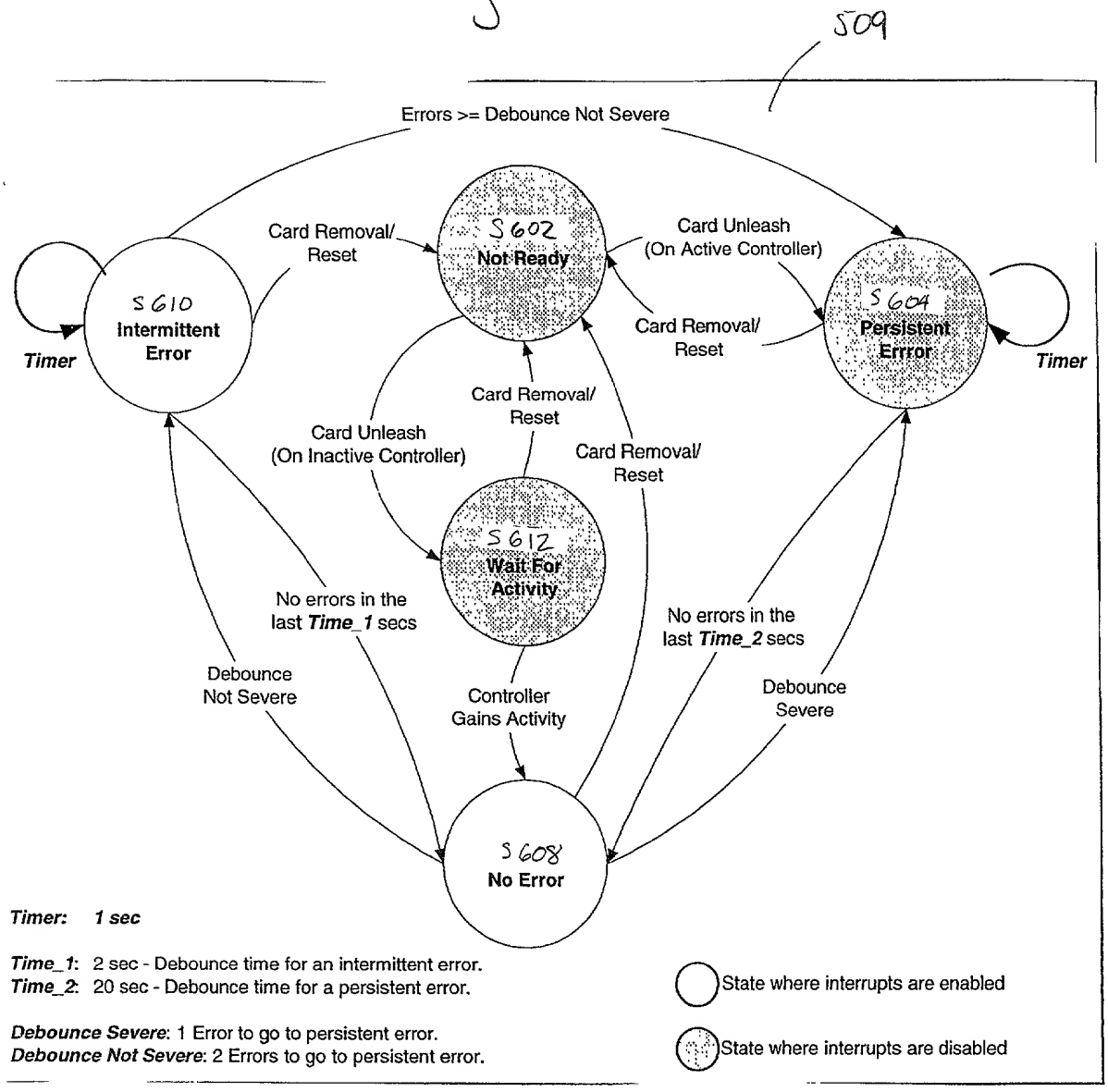

509
Errors >= Debounce Not Severe
S602
Not Ready
S610
Intermittent Error
S604
Persistent Error
S612
Wait For Activity
S608
No Error
Timer
Timer
Card Removal/ Reset
Card Unleash (On Active Controller)
Card Removal/ Reset
Card Removal/ Reset
Card Unleash (On Inactive Controller)
Card Removal/ Reset
No errors in the last Time_1 secs
No errors in the last Time_2 secs
Debounce Not Severe
Controller Gains Activity
Debounce Severe
Timer: 1 sec
Time_1: 2 sec - Debounce time for an intermittent error.
Time_2: 20 sec - Debounce time for a persistent error.
Debounce Severe: 1 Error to go to persistent error.
Debounce Not Severe: 2 Errors to go to persistent error.
State where interrupts are enabled
State where interrupts are disabled

Fig 6B. Physical and Logical Error Tables

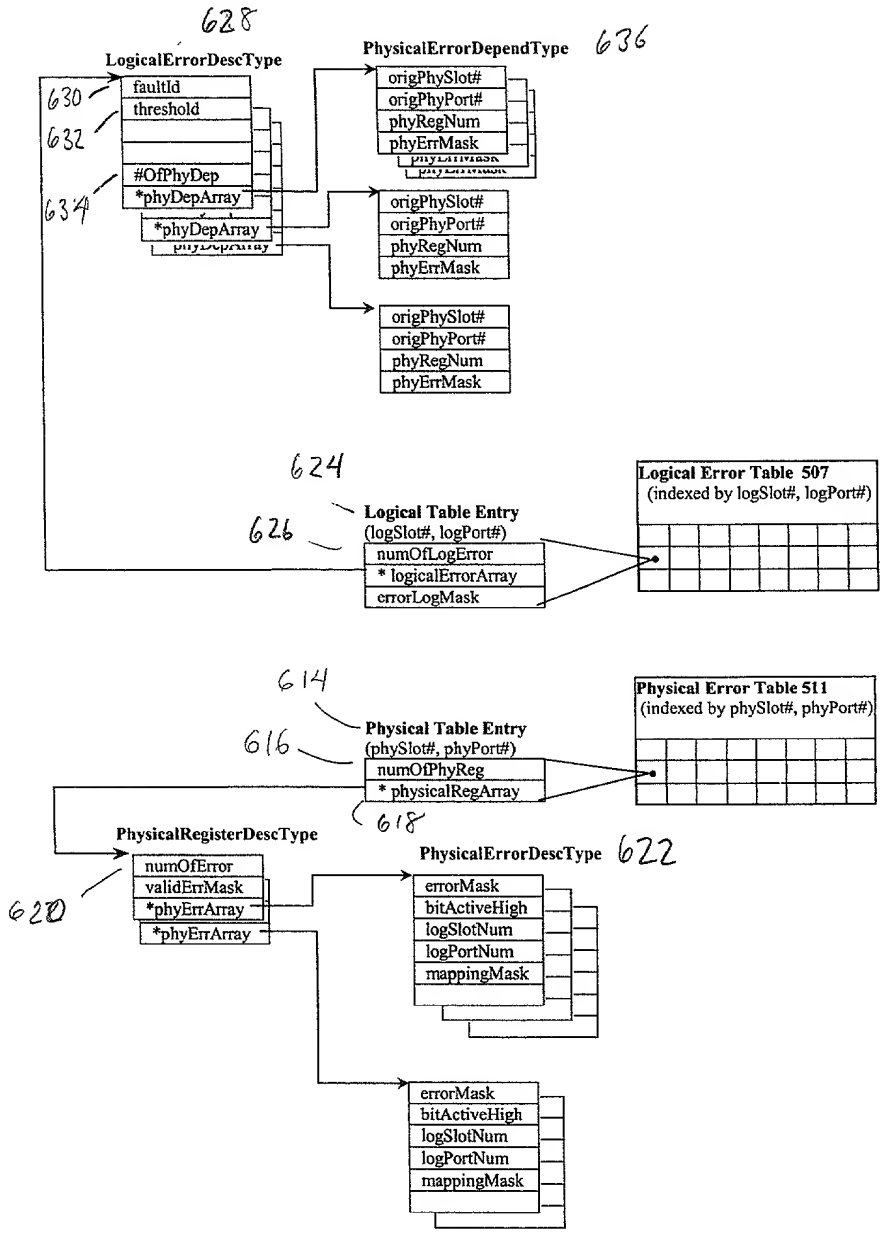
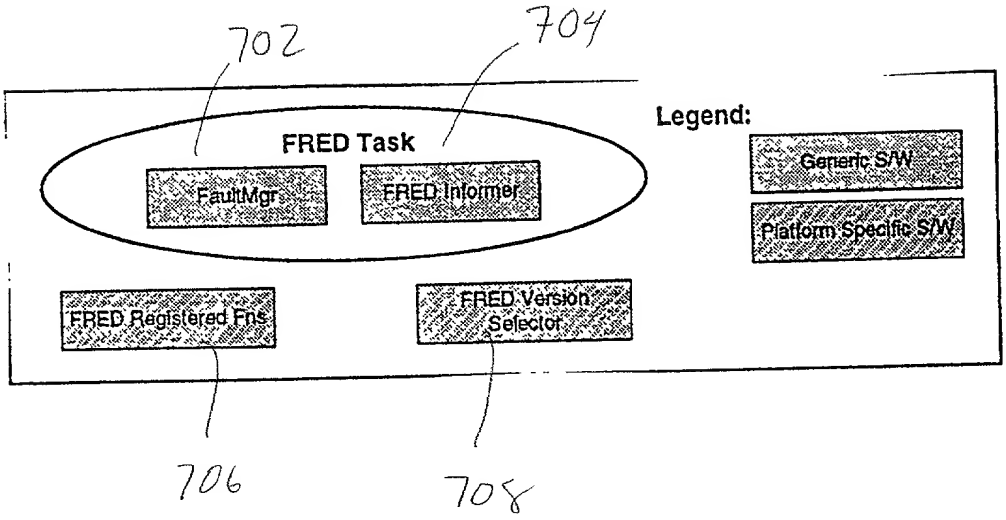


Fig 7


702
704
FRED Task
FaultMgr
FRED Informer
Legend:
Generic S/W
Platform Specific S/W
FRED Registered Fns
FRED Version Selector
706
708

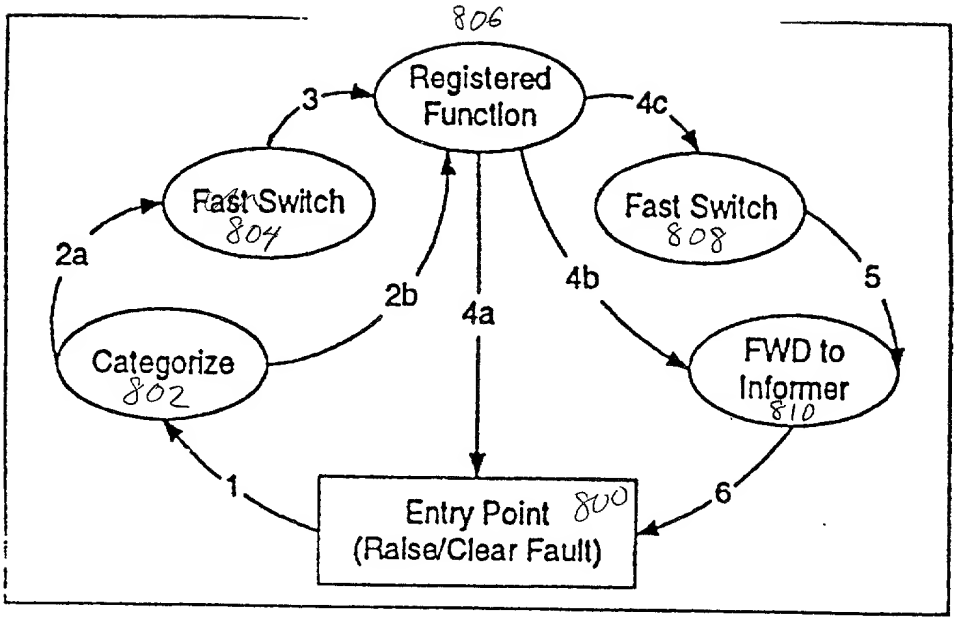

806
Registered Function
3
4c
Fast Switch 804
Fast Switch 808
2a
2b
4a
4b
5
Categorize 802
FWD to Informer 810
1
6
Entry Point 800
(Raise/Clear Fault)

Fig 8

Figure 9a

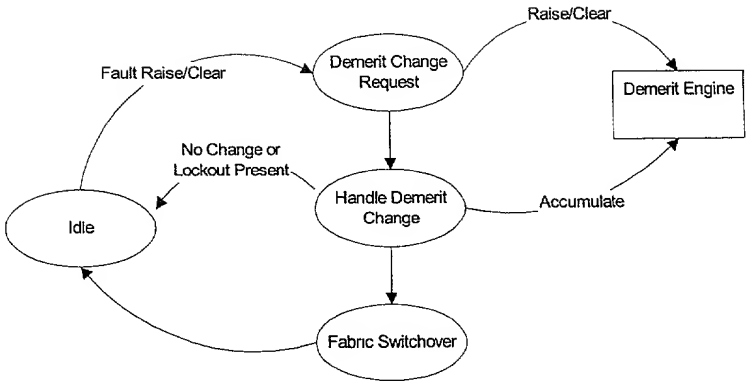


Figure 9b

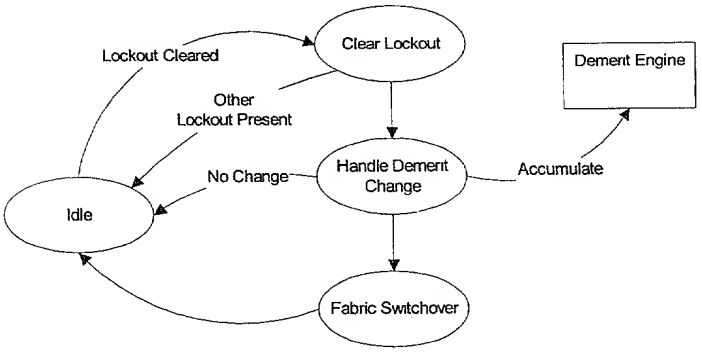


Figure 9c

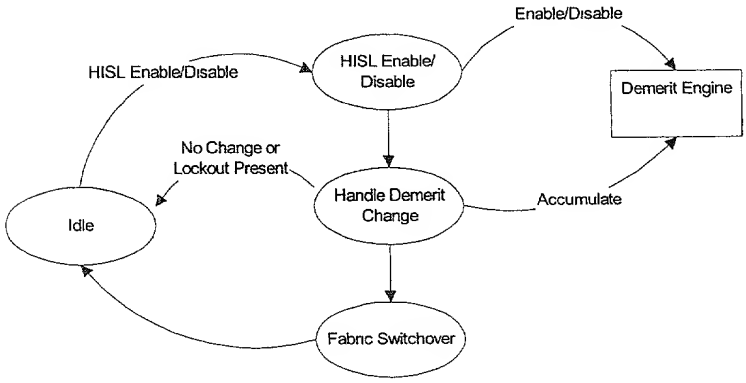


Figure 9d

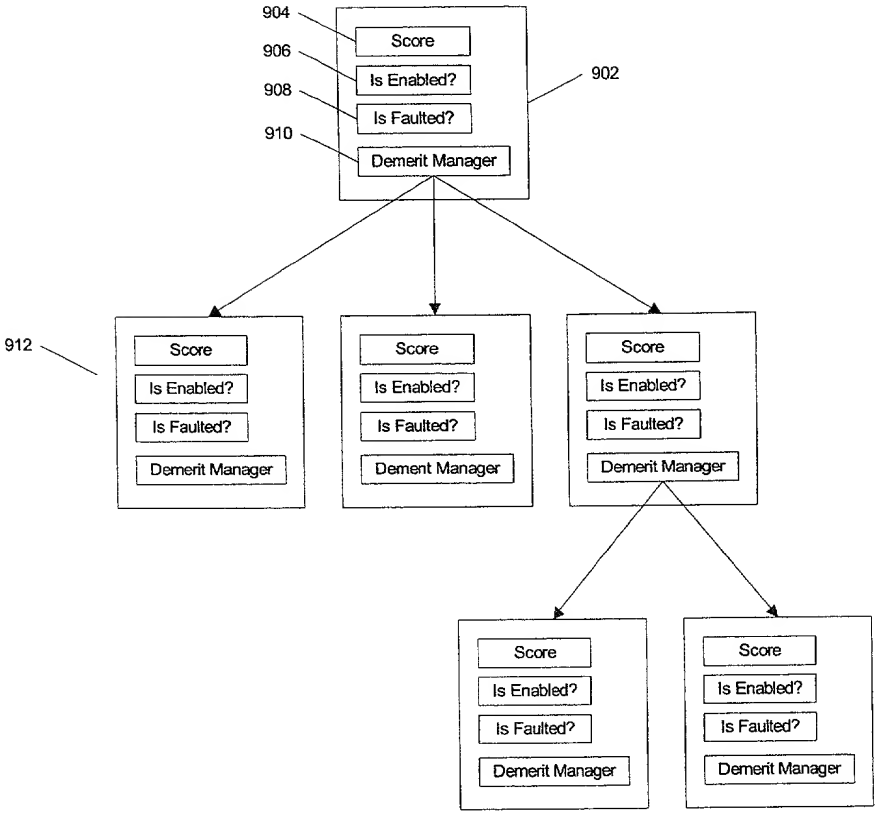
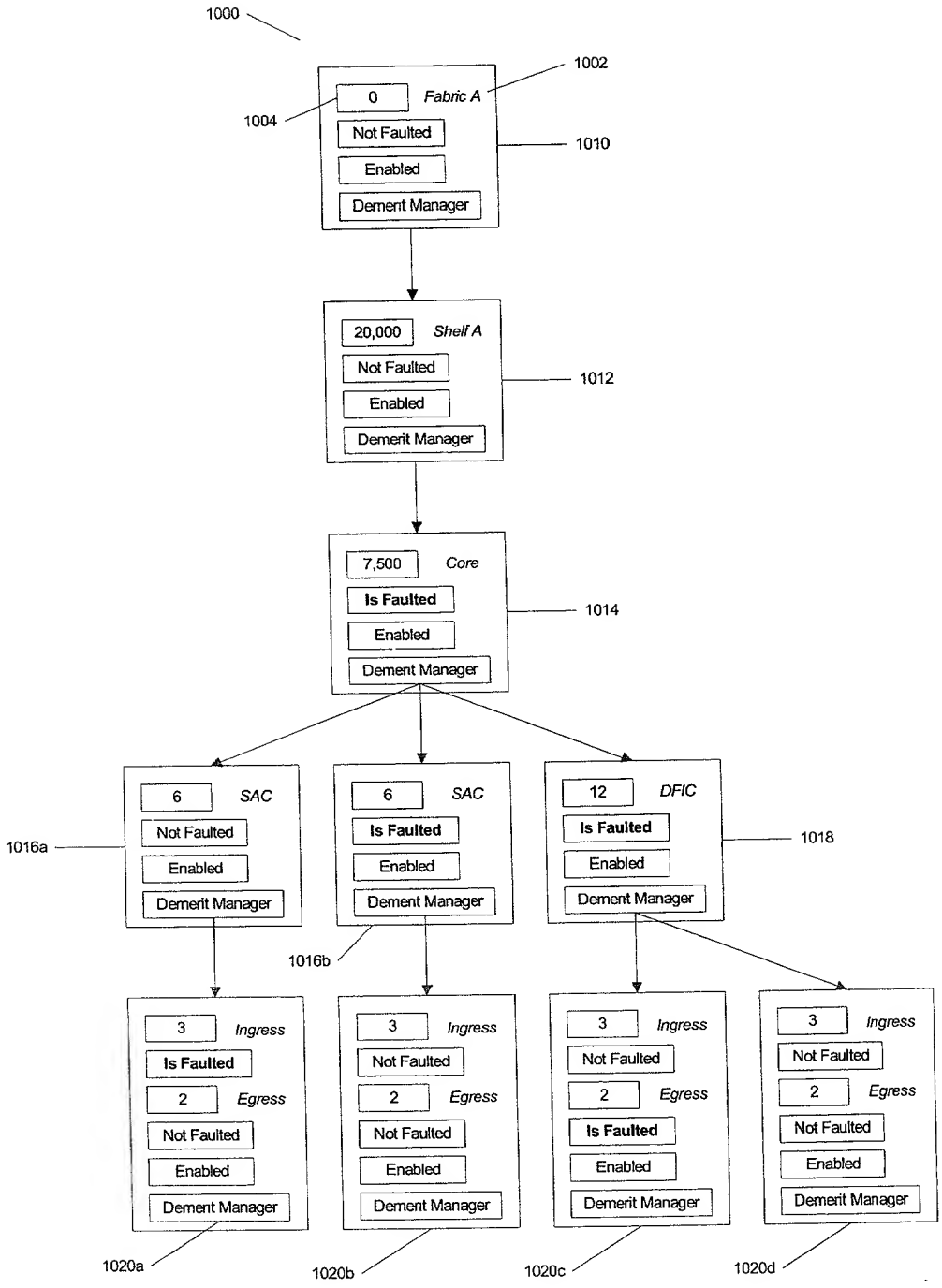

904
906
908
910
902
Score
Is Enabled?
Is Faulted?
Demerit Manager
912
Score
Is Enabled?
Is Faulted?
Demerit Manager
Score
Is Enabled?
Is Faulted?
Dement Manager
Score
Is Enabled?
Is Faulted?
Demerit Manager
Score
Is Enabled?
Is Faulted?
Demerit Manager
Score
Is Enabled?
Is Faulted?
Demerit Manager

Figure 10


1000
1002
0
Fabric A
1004
Not Faulted
1010
Enabled
Dement Manager
20,000
Shelf A
Not Faulted
1012
Enabled
Demerit Manager
7,500
Core
Is Faulted
1014
Enabled
Dement Manager
6
SAC
Not Faulted
1016a
Enabled
Demerit Manager
6
SAC
Is Faulted
Enabled
Dement Manager
1016b
12
DFIC
Is Faulted
1018
Enabled
Dement Manager
3
Ingress
Is Faulted
2
Egress
Not Faulted
Enabled
Dement Manager
1020a
3
Ingress
Not Faulted
2
Egress
Not Faulted
Enabled
Dement Manager
1020b
3
Ingress
Not Faulted
2
Egress
Is Faulted
Enabled
Demerit Manager
1020c
3
Ingress
Not Faulted
2
Egress
Not Faulted
Enabled
Demerit Manager
1020d